

ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

1016-510 WEST HASTINGS STREET
VANCOUVER, B. C. V6B 1L8

(604) 688-2568

GEOLOGICAL AND GEOCHEMICAL REPORTS

on the

NITRO PROPERTY

(Nitro 25-50 Claims)

located at

Latitude 62°23'N; Longitude 137°30'N

NTS 115I/5 & 6

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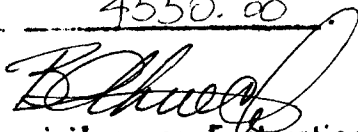


W. DOUGLAS EATON, B.A., B.Sc.

Work performed between August 3 and 6, 1985

091819

This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mineral Act and is allowed as
representative work in the amount
of \$ 4550.00



Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

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INTRODUCTION

The Nitro 1-24 claims were staked in May, 1981 by Nat Joint Venture (Nat) to cover anomalous gold, silver and lead soil values associated with a gossan which was previously explored as a porphyry copper target (Klazan occurrence). In 1981 and 1982 Nat conducted geological mapping, grid soil geochemistry and reconnaissance chip sampling. The sampling outlined a 700 by 200 m area of anomalous soil values surrounding the gossan, plus smaller anomalous areas scattered across the rest of the property. Mapping showed that the anomalies occur in a caldera-like setting with silicified and clay altered welded tuffs cut by a porphyry dyke swarm.

In 1985 Freegold Venture (FV) added the Nitro 25 to 36 claims to the west to protect favourable geology and the Nitro 37 to 50 claims to the north to cover a winter airstrip and potential heap leach pad sites. Exploration in 1985 consisted of grid soil sampling on the new claims and on poorly sampled parts of the 1982 grid. The work was done from a flycamp near the centre of the property and was supervised by the author. Appendix I contains the author's Statement of Qualifications, while Appendix II lists personnel who worked on the property.

PROPERTY, LOCATION AND ACCESS

The property consists of 50 contiguous mineral claims registered in the name of Archer, Cathro & Associates (1981) Limited with the Whitehorse Mining Recorder as follows.

<u>Claim Name</u>	<u>Grant Number</u>	<u>Expiry Date</u>
Nitro 1-24	YA60232-YA60255	March 1, 1989
Nitro 25-50	YA87375-YA87400	June 19, 1986

The Nitro 1-24 claims belong to Nat, while the Nitro 25-50 claims were staked by FV but lie within the Nat area of influence, as shown on Figure B1 on the following page.

The claims are located at latitude 62°23'N and longitude 137°30'W, on NTS map sheets 115I/5 & 6, 71 km southeast of Carmacks. They are bounded on the west by the NAC claims (Nordac Mining Corporation), the south by the ERL claims (FV) and the east by the Nucleus claims (Nat).

The nearest road access is a four-wheel drive trail built by placer miners along the north side of Big Creek, 5 km to the east. A bulldozer trail extends from the property to the end of the Freegold Road (10 km to the east) along the south side of Big Creek, and the route for the proposed Casino Road bisects the property. There is also a winter airstrip suitable for small aircraft on the property. Access in 1985 was by helicopter operating from a base in Carmacks.

NORDAC

NAT(JV)
area of influence

BIG CREEK

NITRO

NUCLEUS

ERL

NAT(JV)
area of influence

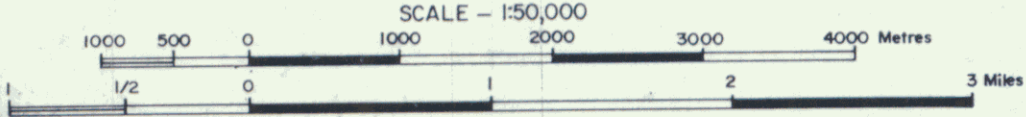
ERL

NUCLEUS

MEC

YUKON REVENUE
OPTIONED TO
NORDAC

ACK



62° 15'

137° 30'

FIGURE B1
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

CLAIM MAP

NUCLEUS EXTENSION

091819

FREGOLD VENTURE

W. J. ...

PREVIOUS WORK AND ACTIVITY BY OTHERS

This property was discovered in 1965 during a reconnaissance geochemical program and staked as the Klazan claims in July, 1966 by Coranex Joint Venture (Frobex Ltd., International Nickel Co. of Canada Ltd., Dome Exploration Ltd., Denison Mines Ltd. and MacIntyre Porcupine Mines Ltd.) which explored with geochemical surveys and mapping in 1966 and bulldozer trenching in 1968. The claims were staked to cover geochemical anomalies in Mo,Cu,Pb, Zn,Ag and As associated with a small but prominent gossan. It was optioned in 1970 by a joint venture between Atlas Explorations Ltd. and Caltor Syndicate (Rayrock Mining Ltd., Canadian Industrial Gas and Oil Ltd. and Ashland Oil Canada Ltd.) which explored the gossan with grid soil sampling, a magnetometer survey, bulldozer trenching and 967 m of diamond drilling in five holes before dropping the option. The best intersections reported from the drilling are 15 m of 0.17% Cu and 3 m of 0.16% Cu and 0.68% MoS₂. Klotassin Joint Venture (Newconex Canada Exploration Ltd., Marietta Resources International Ltd. and Molybdenum Corp. of America) tied on the Roc and Jen claims in 1974 and Skunk claims in 1975 to the northwest and southeast and performed mapping, geochemical surveys and a magnetometer survey in 1975-76.

Burgis Creek, which crosses the property, has been staked for placer gold by Three Creeks Placer and two individuals from Whitehorse. In spring 1985, Three Creeks drilled two fences of percussion holes across the creek immediately downstream from the gossan and in August dug two test shafts. The gold is reported to be fine grained and sporadically distributed, and no economic concentrations were discovered.

PHYSIOGRAPHY AND GEOMORPHOLOGY

The property lies on the south side of Big Creek and is bisected by Burgis Creek which flows north through a deeply incised, linear valley that is perpendicular to the Big Creek Valley. Local elevations range from 760 m on the floor of Burgis Creek to 1130 m on the adjacent north-south trending ridges. Outcrop is rare and much of the property is covered by a thick layer of moss blanketing frozen organics mixed with volcanic ash. The ash layer is sporadic and shows its maximum thickness along Burgis Creek, exceeding 1 m in places. South- and east-facing slopes on upper Burgis Creek are lightly treed with poplars, while other slopes are covered by stunted black spruce and dwarf birch.

GEOLOGY AND MINERALIZATION

Figure B2 illustrates the general geology of the Nitro claims and surrounding area. The 1982 assessment report for the Nitro 1-24 claims contains a detailed description of the property geology. The following summary is based on that work with slight modifications to make it conform with the terminology used elsewhere in this report.

Most of the property is underlain by Mid-Cretaceous rhyolitic welded tuff and tuff breccia and associated felsic feeder plugs and dykes. These rocks occur in a roughly elliptical area which is 4.0 km long in a west-northwest direction and 1.5 km across. Contacts between the tuff breccia and surrounding Jurassic syenite are steep, suggesting that the pyroclastic rocks are preserved in a collapsed caldera. Most pyroclastics are slightly

argillically altered with clay replacing some of the vitreous matrix and ash fragments. The strongest alteration occurs in a 700 by 200 m quartz stockwork underlying the main gossan on the west side of Burgis Creek. Sericitic alteration of breccia clasts is seen in rocks exposed in a trench on a ridge 1 km east of the creek.

The Big Creek syenites are coarse-grained porphyritic plutonic rocks exhibiting strong foliation of orthoclase and hornblende phenocrysts. They are locally cut by narrow quartz-feldspar porphyry dykes which have been interpreted as ring dykes. Both the dykes and syenite are relatively unaltered.

Surface rocks are strongly oxidized and yellow to red-brown limonite occurs as disseminations and on fractures. The 1970 Atlas drilling on the valley floor immediately east of the gossan showed that the depth of total oxidation ranged from 10 to 40 m and examination of unoxidized drill core suggests that most limonite is derived from pyrite with minor arsenopyrite, chalcopyrite, sphalerite and galena. In 1981 Nat reanalyzed the core from the five Atlas holes for gold and obtained consistently anomalous values with 669 m of the 967 m drilled returning greater than 100 ppb, including up to 787 ppb over 15 m in Hole KL-4.

GEOCHEMISTRY

General

All 1985 FV sampling was done using the 1982 Nat baselines for survey control. In previously unsampled areas, the soil was collected at 100 m intervals on compass and topofil controlled lines spaced at 100 m apart. In anomalous areas outlined by the 1982 work, the sample density was increased by adding a line between each pair of earlier sample lines. Thus, samples have now been taken at 50 m intervals on lines spaced 50 m apart. The baselines are marked with 1 m lath pickets at 100 m intervals, while the soil sample sites are indicated by 0.5 m lath pickets bearing an aluminum tag inscribed with the sample number and grid coordinates.

A total of 380 soil samples were collected with 254 coming from the new claims and 126 from the previous anomaly. All were sent to Chemex Labs in North Vancouver where they were screened to -35 mesh, crushed and geochemically analyzed for gold using a fire assay preparation and neutron activation analysis.

Results

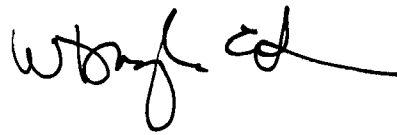
Figure K1 in the pocket illustrates results of the 1985 FV soil sampling which generally confirmed the 1982 results. The gold background on the property is low and most samples returned less than 5 ppb. Only 24 of the 380 samples yielded greater than 20 ppb Au and the majority of these came from fill-in sampling done on the main anomaly in the gossan area on the west side of Burgis Creek. Values up to 167 ppb Au were obtained elsewhere on the property, but no significant clustering of anomalous values is seen and many of them can be explained by known porphyry dykes or alteration zones.

DISCUSSION AND CONCLUSIONS

The soil geochemical anomaly associated with the gossan zone on the Nitro property is one of the best, untested targets for bulk tonnage gold in the Dawson Range. Unfortunately, the 1985 FV sampling was unable to significantly extend the anomaly and did not outline other comparable targets elsewhere on the property. The FV claims staked on the north side of the property secured a large flat area near the geochemical anomaly for potential heap leach pad sites.

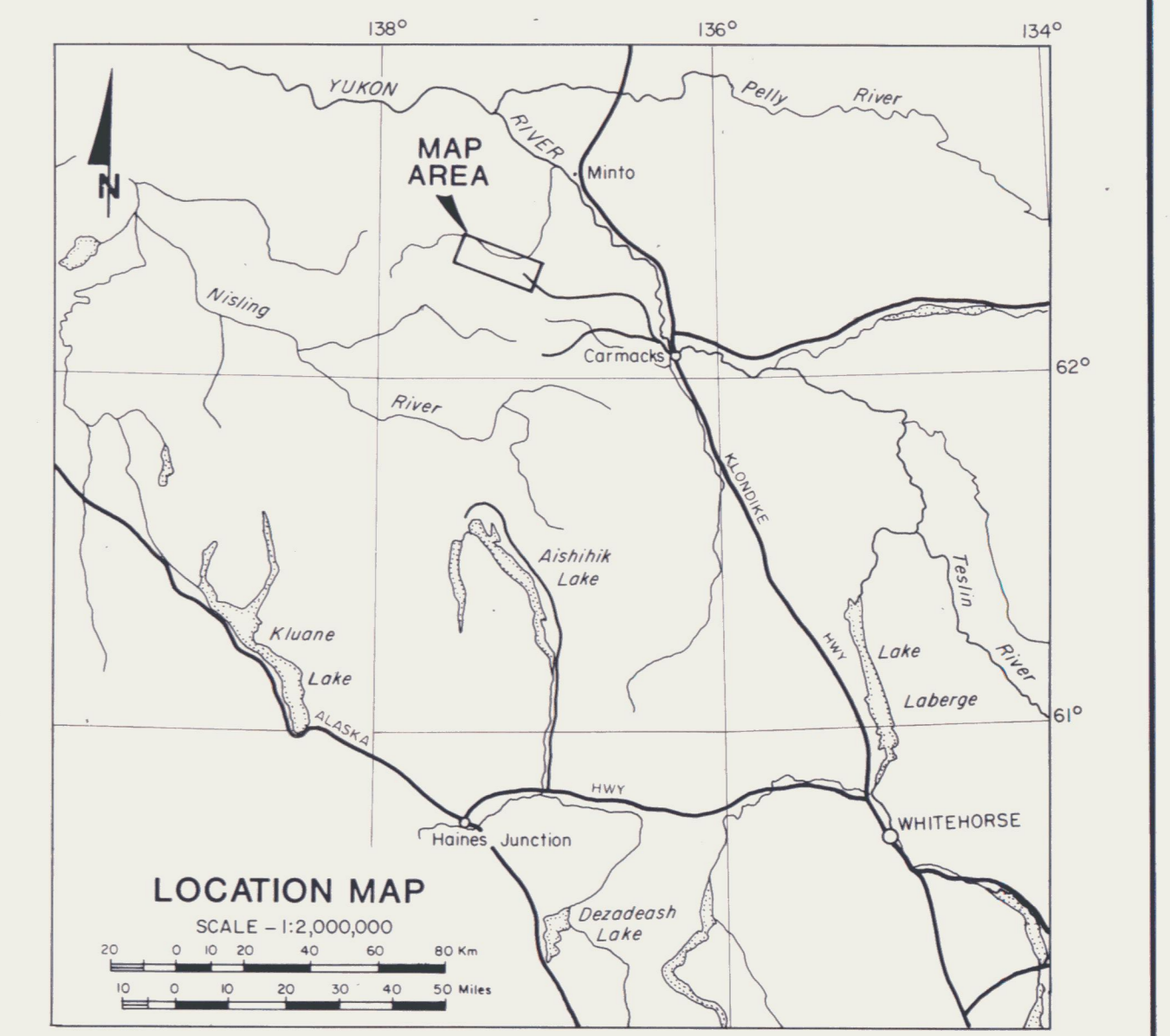
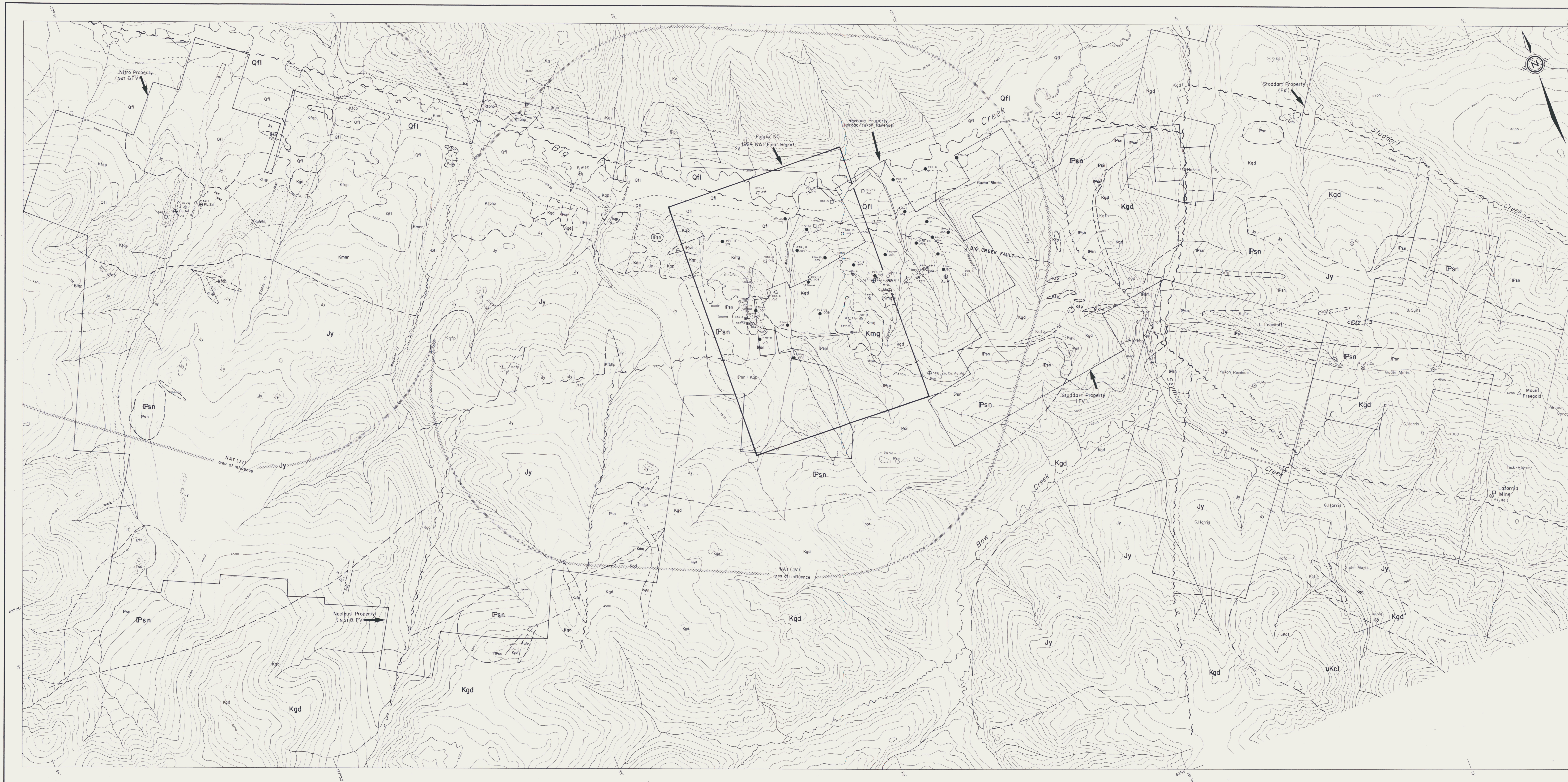
Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

A handwritten signature in black ink, appearing to read 'W.D. Eaton', with a long horizontal flourish extending to the right.

W.D. Eaton, B.A., B.Sc.

/mc

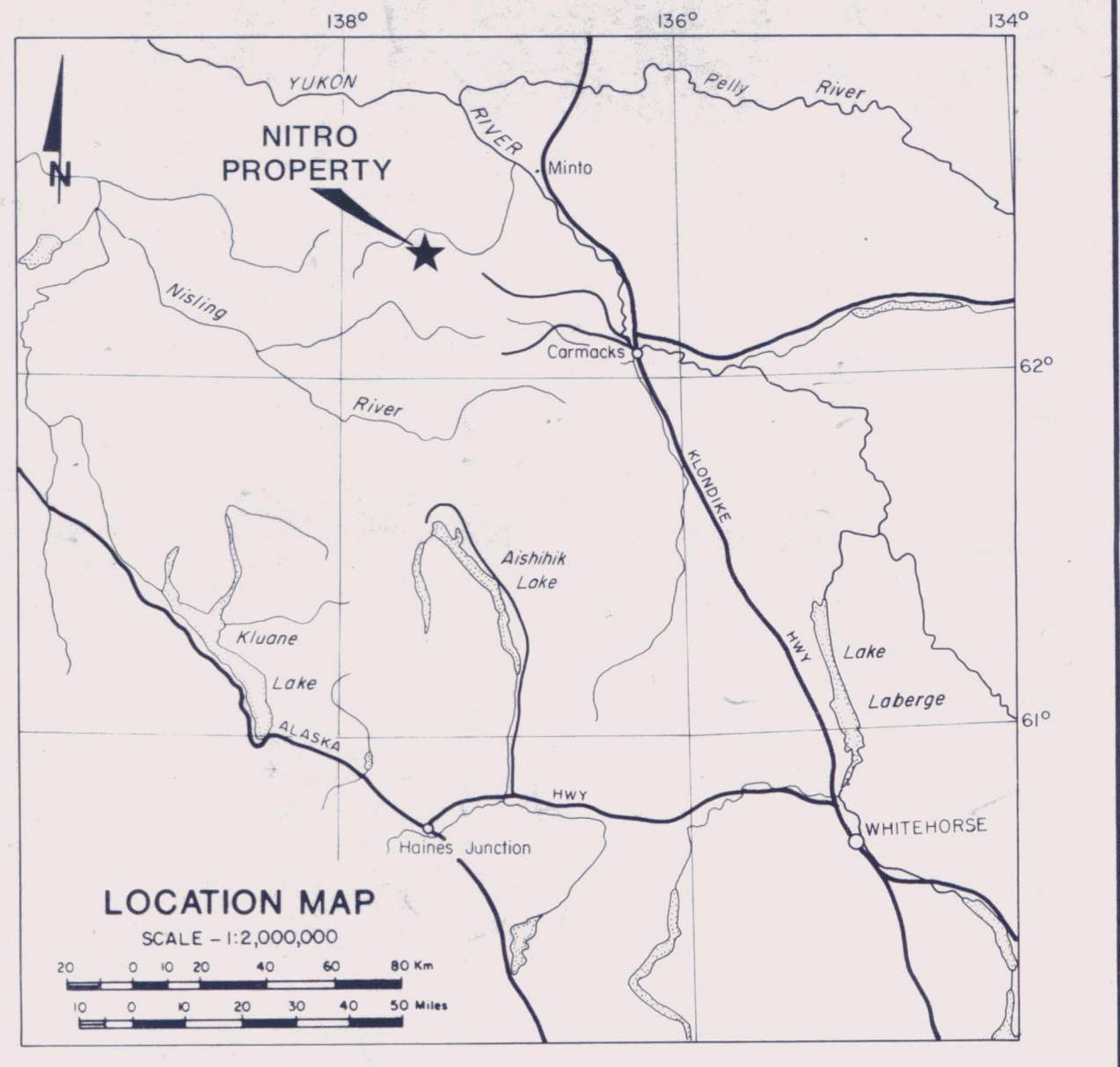
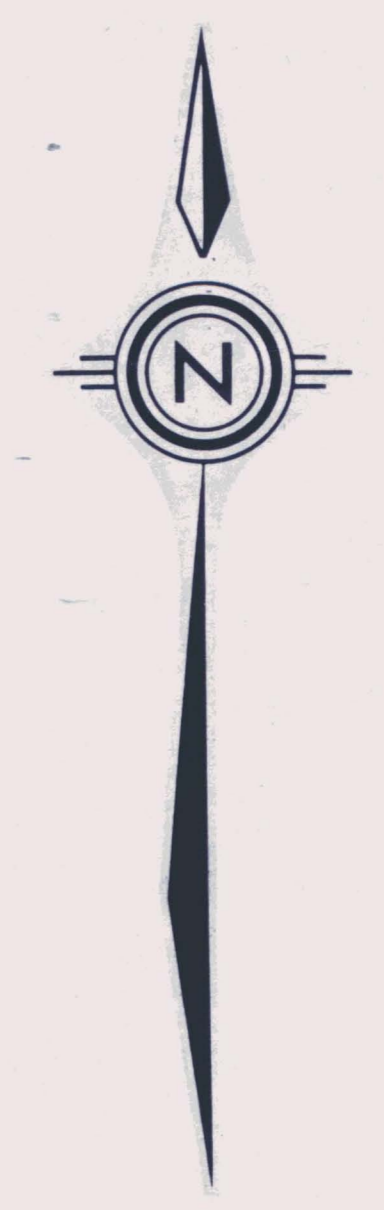


- LEGEND**
- RECENT**
- Qfl Glaciofluvial outwash
- CRETACEOUS**
- uKct Interbedded quartzite, sandy tuff and conglomerate
 - Kmn Andesite
 - Kqfp Quartz feldspar porphyry, grades to quartz porphyry (Kqp), felspar porphyry (Kfp) and felspar-biotite-hornblende porphyry (Kfbp)
 - Kmg Microgranite
 - Kgd Cassio Granodiorite
 - Kg Coffee Creek Granite
- JURASSIC**
- Jy Big Creek Sinite
- PALEOZOIC OR OLDER**
- Psn Pelly Gneiss: schist with lesser greists, amphiboles and quartzites
 - Ppn Selwyn Gneiss: hornblende-biotite-chlorite greists

- - - Approximate geological contact
- Fault
- Outcrop
- Physite and/or argillic alteration zone
- - - Road, trail
- Air strip (W-winter use only)
- - - Property boundary
- - - NAT JV area of influence
- Mineral occurrence and metal (I - float)

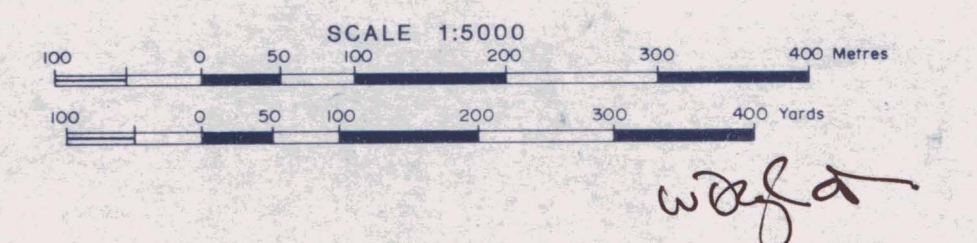
Figure B2
 ARCHER, CATIRO & ASSOCIATES (1981) LIMITED
GEOLOGICAL COMPILATION
BIG CREEK AREA
 FREEGOLD VENTURE

SCALE - 1:20,000
 0 500 1000 1500 2000 METERS
 0 0.5 1 MILES



- Soil sample location with gold value in ppb
- x Drill sample location with gold value in ppb
- 25 — Solid soil contour
- — Diamond drill hole, inclined (D70)
- — Diamond drill hole vertical (D70)

Figure K1
 ARCHER, CATIRO & ASSOCIATES (1981) LIMITED
GOLD GEOCHEMISTRY
 NITRO PROPERTY
 FREEGOLD VENTURE



waga
 To accompany report dated December 1981

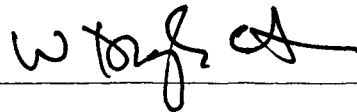
APPENDIX I

Author's Statement of Qualifications

STATEMENT OF QUALIFICATIONS

I, W. Douglas Eaton, geologist, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in Burnaby, British Columbia, do hereby declare:

1. I graduated from the University of British Columbia in 1980 with a B.Sc.
2. From 1971 to the present, I have been actively engaged in mineral exploration in British Columbia and Yukon Territory and on June 1, 1981, became a partner in Archer, Cathro & Associates (1981) Limited.
3. I have personally participated in or supervised the field work reported herein and have interpreted all data resulting from this work.



W. Douglas Eaton, B.A., B.Sc.

APPENDIX II

List of Personnel

LIST OF PERSONNEL - NITRO PROPERTY

DATES WORKED: August 3 to 6, 1985

<u>NAME</u>	<u>ADDRESS</u>	<u>POSITION</u>
W. Halleran	Box 793, Fort St. James, B.C.	Geologist
M. Walls	913 - 9th Street S., Cranbrook, B.C.	Geologist
S. Boyce	Box 414, Westport, Ontario	Student
T. Mundle	#8-2104 West 37th Avenue, Vancouver, B.C.	Student
P. Schmidt	979 Ridgeway Street, Victoria, B.C.	Student